

Claims

1. Single- or multilayered forming sieve for the wet end-section of a paper machine with upper machine-direction, MD, and cross-machine-direction, CMD, threads facing the paper side, and lower MD and CMD threads facing the machine, characterized in that:
at least the paper-side thread floats and knuckles (10) are reshaped by means of one or a combination of temperature, pressure and/or moisture.
2. Sieve according to claim 1, wherein,
the threads (12, 13) are made of, or contain, one or more than one of a polymer such as a polyester, a polyamide or a polyolefin.
3. Sieve according to any of claims 1 or 2, wherein,
the temperature lies between 100°C and 190°C
4. Sieve according to claim 3, wherein,
the temperature lies between 150°C and 170°C.
5. Sieve according to any of the claims 1 to 4, wherein,
the pressure lies between 10 kPa and 40 kPa.
6. Sieve according to any of the claims 1 to 5, wherein,
the threads on the paper side have a diameter of between 0.09mm and 0.20mm,
and the machine-side threads have a diameter of between 0.15mm and 0.30mm.
7. Sieve according to claim 6, wherein,
the threads on the paper side have a diameter of 0.13mm, and the machine-side threads have a diameter of 0.18mm.
8. Sieve according to any of the claims 1 to 7, wherein,
the width of the thread floats and knuckles (10) is greater than the diameter of the remainder of the thread (13), by between 5% and 15%.
9. Sieve according to any of the claims 1 to 7, wherein,
the height of the thread floats and knuckles (10) is between 10% and 30% less than the diameter of the remainder of the thread (13).

10. Sieve according to claim 9, wherein,
the height of the thread floats and knuckles (10) is 20% less than the diameter of the
remainder of the thread (13).
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11. Sieve according to any of the claims 1 to 10, wherein,
the thread floats and knuckles comprise flat "thread ellipses" (11) extending
approximately parallel with the plane of the sieve.
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12. Sieve according to any of the claims 1 to 11, wherein,
the total contact area of the sieve is about 40 to 45% of the total surface area of the
sieve.
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13. Sieve according to any of the claims 1 to 12, wherein,
as a result of the thread inflection regions being reshaped, the void size lying
between the threads (13) is reduced by between 1% and 15% from the original void
size prior to inflection region reshaping.
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14. Sieve according to any of the claims 1 to 13, wherein,
one, or a combination of more than one, of: the thread inflection shape, the width of
the thread floats and knuckles (10), the height of the thread floats and knuckles (10),
the degree of ellipticity of the threads (13), the total contact area of the sieve and the
void size lying between the threads (13) varies across each point of the sieve's
width.
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15. A method of forming a sieve for the wet end-section of a paper machine, comprising:
calendering a sieve fabric with a plurality of rollers at one, or a combination of more
than one, of: temperature, pressure and/or moisture, so as to permanently reshape
the thread inflection regions at least on the paper-side of the sieve.
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16. The method according to claim 15, wherein,
at least one of the plurality of rollers is formed from a plurality of segments which
can be individually adjusted to change the pressure exerted on the fabric, so that the
resulting sieve has a tailored cross sectional profile across its width.
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17. The method according to any of claims 15 and 16, wherein,
at least one of the plurality of rollers can be heated to apply a specific heat to the

sieve during processing, and the temperature can be changed along the length of the roller to apply a specific profile to the sieve.

- 5 18. The method according to any of claims 15 to 17, wherein,
 the pressure lies between 10 kPa and 40 kPa.
19. The method according to any of claims 15 to 18, wherein,
 the temperature lies between 100°C and 190°C.
- 10 20. The method according to any of claims 15 to 19, wherein,
 the temperature lies between 150°C and 170°C.